



17082-081001 / 24736-2073

SEQUENCE LISTING

<110> van den Boom, Dirk

Böcker, Sebastian

<120> FRAGMENTATION-BASED METHODS AND SYSTEMS  
FOR SEQUENCE VARIATION DETECTION AND DISCOVERY

<130> 24736-2073

<140> 10/723,365

<141> 2003-11-26

<150> US 60/429,895

<151> 2002-11-27

<160> 85

<170> FastSEQ for Windows Version 4.0

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<212> PRT

<213> Artificial Sequence

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<223> Renin cleavage site

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<223> Factor Xa cleavage site

<220>

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<222> 5

<223> Xaa = Any Amino Acid Except Pro or Arg

<400> 2

Ile Glu Gly Arg Xaa

1

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<210> 3

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<220>

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<223> Xaa = Any Amino Acid Except Pro or Arg

<400> 3  
 Ile Asp Gly Arg Xaa  
 1 5

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<400> 4  
 Ala Glu Gly Arg Xaa  
 1 5

<210> 5  
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<220>  
 <223> Collagenase cleavage site

<220>  
 <221> VARIANT  
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 1 5

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 <213> Artificial Sequence

<220>  
 <223> Forward primer for base-specific cleavage

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<210> 7  
 <211> 28  
 <212> DNA  
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<220>  
 <223> Reverse primer for base-specific cleavage

<400> 7  
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<210> 8  
 <211> 340

<212> DNA  
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<220>  
 <223> Amplicon for base-specific cleavage

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 cagaagggcg agcaggccac ctccctggcc atcctcaggg tcatccgctt ggtaagggtt 180  
 tttagaatct tcaagctctc ccgccactct aagggcctcc agatcctggg ccagaccctc 240  
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<210> 9  
 <211> 23  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> Forward primer for partial cleavage

<220>  
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<400> 9  
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<210> 10  
 <211> 23  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> Reverse primer for partial cleavage

<400> 10  
 agcggataac aatttcacac agg 23

<210> 11  
 <211> 117  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> Amplicon for partial cleavage

<400> 11  
 cccagtcacg acgttgtaaa acgtccaggg aggactcacc atgggcattt gattgcagag 60  
 cagctccgag tccatccaga gcttcctgca gtcacctgtg tgaaattggt atccgct 117

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 <211> 21  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> Reference sequence

<220>  
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 <222> 11  
 <223> n = C or A

<220>  
 <221> misc\_feature  
 <222> 1, 2, 3, 8, 9, 10, 12, 13, 14, 19, 20, 21  
 <223> n = A,T,C or G

<400> 12  
 nnnactgnnn nnnntgacnn n 21

<210> 13  
 <211> 583  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> CETP Amplicon

<400> 13  
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 ggctccattc cctgctccat ttcccaggca tagggacttg tagggggctg gaaccccagg 180  
 atcaactctg ggctcagagg gccccagcaa taagtgactg ttgattactc ctgatcccaa 240  
 agctgacttc aggcaagctc cttggaggct gcagcccctt cttgctatgc ccagtggcaa 300  
 tgatgttcat aatcccactc ctcagtgcag ggttcacta agaaccatg atctcctacc 360  
 tcaaattggac ctcatgcttt ctgagtaagc ctccctcagc tttctggta cctcactccc 420  
 cccaccact gcaatgactt cttcaggcct tccctgccat cctcaaactc ccagtgtccc 480  
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<210> 14  
 <211> 483  
 <212> DNA  
 <213> Mycobacterium abscessus

<300>  
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 <309> 2003-01-03

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 gatgagcccg cggcctatca gcttgttggt ggggtaatgg cccaccaagg cgacgacggg 180  
 tagccggcct gagagggtga ccggccacac tgggactgag atacggccca gactcctacg 240  
 ggaggcagca gtggggaata ttgcacaatg ggcgcaagcc tgatgcagcg acgcccgcgtg 300  
 agggatgacg gccttcgggt tgtaaacctc tttcagtagg gacgaagcga aagtgacggg 360  
 acctacagaa gaaggaccgg ccaactacgt gccagcagcc gcggtaatat gtagggtccg 420  
 agcgttgtcc ggaattactg ggcgtaaaga gctcgtaggg ggtttgcgc gttgttcgtg 480  
 aaa 483

<210> 15  
 <211> 495  
 <212> DNA  
 <213> Mycobacterium avium

<300>  
 <308> EMBL Accession No. AJ536037  
 <309> 2003-01-03

<400> 15  
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 tctaataaccg gataggacct caagacgcat gtcttctggt ggaaagcttt tgcggtgtgg 120  
 gatgggcccg cggcctatca gcttgttggt ggggtgacgg cctaccaagg cgacgacggg 180  
 tagccggcct gagagggtgt ccggccacac tgggactgag atacggccca gactcctacg 240  
 ggaggcagca gtggggaata ttgcacaatg ggcgcaagcc tgatgcagcg acgcccgcgtg 300  
 ggggatgacg gccttcgggt tgtaaacctc tttcaccatc gacgaagggtc cgggttttct 360  
 cggattgacg gtagggtggag aagaagcacc ggccaactac gtgccagcag ccgcggtaat 420

acgtagggtg cgagcgttgt ccggaattac tgggcgtaaa gagctcgtag gtggtttgtc 480  
gcgttggttcg tgaaa 495

<210> 16  
<211> 495  
<212> DNA  
<213> Mycobacterium celatum

<300>  
<308> EMBL Accession No. AJ536040  
<309> 2003-01-03

<400> 16  
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gatgggcccg cggcctatca gcttgttggg ggggtgatgg cctaccaagg cgacgacggg 180  
tagccggcct gagaggggtg ccggccacac tgggactgag atacggccca gactcctacg 240  
ggaggcagca gtggggaata ttgcacaatg ggcgcaagcc tgatgcagcg acgccgcgtg 300  
ggggatgacg gccttcgggt tgtaaacctc tttcaccatc gacgaagctg ccggttttcc 360  
ggtggtgacg gtaggtggag aagaagcacc ggccaactac gtgccagcag ccgcggtaat 420  
acgtagggtg cgagcgttgt ccggaattac tgggcgtaaa gagctcgtag gtggtttgtc 480  
gcgttggttcg tgaaa 495

<210> 17  
<211> 483  
<212> DNA  
<213> Mycobacterium fortuitum

<300>  
<308> EMBL Accession No. AJ536039  
<309> 2003-01-03

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gatgggcccg cggcctatca gcttgttggg ggggtaatgg cctaccaagg cgacgacggg 180  
tagccggcct gagaggggtg ccggccacac tgggactgag atacggccca gactcctacg 240  
ggaggcagca gtggggaata ttgcacaatg ggcgcaagcc tgatgcagcg acgccgcgtg 300  
agggatgacg gccttcgggt tgtaaacctc tttcaatagg gacgaagcgc aagtgcagggt 360  
acctatagaa gaaggaccgg ccaactacgt gccagcagcc gcggtaatat gtaggggtccg 420  
agcgttgtcc ggaattactg ggcgtaaaaga gctcgtagggt ggtttgcgcg gttgttcgtg 480  
aaa 483

<210> 18  
<211> 495  
<212> DNA  
<213> Mycobacterium gordonae

<300>  
<308> EMBL Accession No. AJ536042  
<309> 2003-01-03

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tctaataaccg aataggacca caggacacat gtcctgtggg ggaaagcttt tgcggtgtgg 120  
gatgggcccg cggcctatca gcttgttggg ggggtgatgg cctaccaagg cgacgacggg 180  
tagccggcct gagaggggtg ccggccacac tgggactgag atacggccca gactcctacg 240  
ggaggcagca gtggggaata ttgcacaatg ggcgaaagcc tgatgcagcg acgccgcgtg 300  
ggggatgacg gccttcgggt tgtaaacctc tttcaccatc gacgaagggt ccggttttct 360  
cgggctgacg gtaggtggag aagaagcacc ggccaactac gtgccagcag ccgcggtaat 420  
acgtagggtg cgagcgttgt ccggaattac tgggcgtaaa gagctcgtag gtggtttgtc 480  
gcgttggttcg tgaaa 495

<210> 19  
<211> 495

<212> DNA  
 <213> *Mycobacterium intracellulare*

<300>  
 <308> EMBL Accession No. AJ536036  
 <309> 2003-01-03

<400> 19  
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 tctaataaccg gataggacct ttaggcgcat gtcttttaggt ggaaagcttt tgcggtgtgg 120  
 gatgggcccg cggcctatca gcttggttggg ggggtgatgg cctaccaagg cgacgacggg 180  
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 ggaggcagca gtggggaata ttgcacaatg ggcgcaagcc tgatgcagcg acgccgcgtg 300  
 ggggatgacg gccttcgggt tgtaaaccctc tttcaccatc gacgaagggtc cgggttttct 360  
 cggattgacg gtaggtggag aagaagcacc ggccaactac gtgccagcag ccgcggtaat 420  
 acgtaggggtg cgagcgttgt ccggaattac tgggcgtaaa gagctcgtag gtggtttgtc 480  
 gcgttggttcg tgaaa 495

<210> 20  
 <211> 495  
 <212> DNA  
 <213> *Mycobacterium kansasii*

<300>  
 <308> EMBL Accession No. AJ536035  
 <309> 2003-01-03

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 gatgggcccg cggcctatca gcttggttggg ggggtgacgg cctaccaagg cgacgacggg 180  
 tagccggcct gagaggggtgt ccggccacac tgggactgag atacggccca gactcctacg 240  
 ggaggcagca gtggggaata ttgcacaatg ggcgcaagcc tgatgcagcg acgccgcgtg 300  
 ggggatgacg gccttcgggt tgtaaaccctc tttcaccatc gacgaagggtc cgggttttct 360  
 cggattgacg gtaggtggag aagaagcacc ggccaactac gtgccagcag ccgcggtaat 420  
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 gcgttggttcg tgaaa 495

<210> 21  
 <211> 495  
 <212> DNA  
 <213> *Mycobacterium marinum*

<300>  
 <308> EMBL Accession No. AJ536032  
 <309> 2003-01-03

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 gatgggcccg cggcctatca gcttggttggg ggggtaacgg cctaccaagg cgacgacggg 180  
 tagccggcct gagaggggtgt ccggccacac tgggactgag atacggccca gactcctacg 240  
 ggaggcagca gtggggaata ttgcacaatg ggcgcaagcc tgatgcagcg acgccgcgtg 300  
 ggggatgacg gccttcgggt tgtaaaccctc tttcaccatc gacgaagggtt cgggttttct 360  
 cggattgacg gtaggtggag aagaagcacc ggccaactac gtgccagcag ccgcggtaat 420  
 acgtaggggtg cgagcgttgt ccggaattac tgggcgtaaa gagctcgtag gtggtttgtc 480  
 gcgttggttcg tgaaa 495

<210> 22  
 <211> 492  
 <212> DNA  
 <213> *Mycobacterium scrofulaceum*

<300>  
 <308> EMBL Accession No. AJ536034

&lt;309&gt; 2003-01-03

&lt;400&gt; 22

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gatgggcccc cgccctatca gctagtgggt ggggtgatgg cctaccaagg cgacgacggg 180
tagccggcct gagagggtgt ccggccacac tgggactgag atacggccca gactcctacg 240
ggaggcagca gtggggaata ttgcacaatg ggcgcaagcc tgatgcagcg acgccgcgtg 300
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gttgacggta ggtggagaag aagcaccggc caactacgtg ccagcagccg cggtaatacg 420
taggggtgca gcgttggtcc gaattactgg gcgtaaagag ctcgtagggt gtttgtcgcg 480
ttgttcgtga aa 492

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&lt;210&gt; 23

&lt;211&gt; 485

&lt;212&gt; DNA

<213> *Mycobacterium smegmatis*

&lt;300&gt;

&lt;308&gt; EMBL Accession No. AJ536041

&lt;309&gt; 2003-01-03

&lt;400&gt; 23

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acgggtgagt aacacgtggg tgatctgccc tgcactttgg gataagcctg ggaaactggg 60
tctaataccg aatacaccct gctggtcgca tggcctggta ggggaaagct tttgcggtgt 120
gggatggggc cgcgccctat cagcttggtg gtggggtgat ggcctacca ggcgacgacg 180
ggtagccggc ctgagagggg gaccggccac actgggactg agatacggcc cagactccta 240
cgggaggcag cagtggggaa tattgcacaa tgggcgcaag cctgatgcag cgacgccgcg 300
tgagggatga cggccttcgg gttgtaaacc tctttcagca cagacgaagc gcaagtgcag 360
gtatgtgcag aagaaggacc ggccaactac gtgccagcag ccgcggtaac acgtagggtc 420
cgagcgttgt ccggaattac tgggcgtaaa gagctcgtag gtggtttgtc gcgttggttcg 480
tgaaa 485

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&lt;210&gt; 24

&lt;211&gt; 497

&lt;212&gt; DNA

<213> *Mycobacterium tuberculosis*

&lt;300&gt;

&lt;308&gt; EMBL Accession No. AJ536031

&lt;309&gt; 2003-01-03

&lt;400&gt; 24

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atacgtaggg tgcgagcggt gtccggaatt actgggcgta aagagctcgt aggtggtttg 480
tcgcgttggt cgtgaaa 497

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&lt;210&gt; 25

&lt;211&gt; 499

&lt;212&gt; DNA

<213> *Mycobacterium xenopi*

&lt;300&gt;

&lt;308&gt; EMBL Accession No. AJ536033

&lt;309&gt; 2003-01-03

&lt;400&gt; 25

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acgggtgagt aacacgtggg tgacctgccc tgcacttcgg gataagcctg ggaaactggg 60
tctaataccg gataggacca ttctgcgcat gtggggtggg ggaaagtgtt tggtagcggt 120

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gtgggatggg cccgcggcct atcagcttgt tgggtggggtg atggcctacc aaggcgacga 180
cgggtagccg gcctgagagg gtgtccggcc acactgggac tgagatacgg cccagactcc 240
tacgggaggg agcagtgggg aatattgcac aatggggcgca agcctgatgc agcgacgccg 300
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tgtcgcgttg ttcgtggaa

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<210> 26
<211> 492
<212> DNA
<213> Mycobacterium paraffinicum

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<400> 26
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ttgttcgtga aa

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<210> 27
<211> 483
<212> DNA
<213> Mycobacterium interjectum

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gatgggcccg cggcctatca gctagtgggt ggggtgacgg cctaccaagg cgacgacggg 180
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ggaggcagca gtggggaata ttgcacaatg ggcgcaagcc tgatgcagcg acgccgcgtg 300
ggggatgacg gccttcgggt tgtaaacctc tttcagcagg gacgaagcgc aagtgcgggt 360
acctgcagaa gaagcaccgg ccaactacgt gccagcagcc gcggtaatat gtaggggtgcg 420
agcgttggtc ggaattactg ggcgtaaaag gctcgtaggt ggtttgtcgc gttgttcgtg 480
aaa

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<210> 28
<211> 484
<212> DNA
<213> Mycobacterium aurum

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<400> 28
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tctaataacc aataggacta cgcgatgcat gtcgtgtggt ggaaagcttt tgcggtgtgg 120
gatgggcccg cggcctatca gcttggtggt gaggttacgg ctaccaagg cgacgacggg 180
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agggatgacg gccttcgggt tgtaaacctc tttcgccagg gacgaagcgc aagtgcgggt 360
acctggagaa gaaggaccgg ccaactacgt gccagcagcc gcggtaaata ctaggggtgc 420
gagcgttggt cggaattact gggcgtaaag agctcgtagg tggtttgtcg cgttggttcgt 480
gaaa

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<210> 29
<211> 1542
<212> DNA
<213> Escherichia coli

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<300>
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<309> 2003-01-03

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<400> 29
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tgtctgggaa actgcctgat ggagggggat aactactgga aacggtagct aataccgcat 180
aacgtcgcaa gaccaaagag ggggaccttc gggcctcttg ccatcggatg tgcccagatg 240
ggattagcta gtaggtgggg taacggctca cctaggcgac gatccctagc tggctctgaga 300
ggatgaccag ccacactgga actgagacac ggtccagact cctacgggag gcagcagtgg 360
ggaatattgc acaatgggag caagcctgat gcagccatgc cgcgtgtatg aagaaggcct 420
tcgggttgta aagtactttc agcggggagg aagggagtaa agttaatacc tttgctcatt 480
gacgttacct gcagaagaag caccggctaa ctccgtgcca gcagccgcgg taatacggag 540
ggtgcaagcg ttaatcggaa ttactgggag taaagcgcac gcaggcgggt tgtaaagtca 600
gatgtgaaat ccccgggctc aacctgggaa ctgcatctga tactggcaag cttgagcttc 660
gtagaggggg gtagaattcc aggtgtagcg gtgaaatgag tagagatctg gaggaatacc 720
ggtagggcga ggcggccccct ggacgaagac tgacgctcag gtgcgaaagc gtggggagca 780
aacaggatta gataccctgg tagtccacgc cgtaaacgat gtcgacttgg aggttgtgcc 840
cttgaggcgt ggcttccgga gctaaccgct taagtgcacc gcctggggag tacggccgca 900
aggttaaaac tcaaatgaat tgacgggggc ccgcacaagc ggtggagcat gtggtttaat 960
tcgatgcaac gcgaagaacc ttacctggct ttgacatcca cggaagtttt cagagatgag 1020
aatgtgcctt cgggaaccgt gagacagggt ctgcatggct gtcgtcagct cgtgttgtag 1080
aatgttgggt taagtcccg caccgagcga acccttatcc tttgttgcca gcggtccggc 1140
cggaactca aaggagactg ccagtataaa actggaggaa ggtggggatg acgtcaagtc 1200
atcatggccc ttacgaccag ggctacacac gtgctacaat ggcgcataca aagagaagcg 1260
acctcgcgag agcaagcgga cctcataaag tgcgtcgtag tccggattgg agtctgcaac 1320
tcgactccat gaagtcggaa tcgctagtaa tcgtggatca gaatgccacg gtgaatacgt 1380
tcccgggcct tgtacacacc gcccgtcaca ccatgggagt ggggttgcaa agaagtaggt 1440
agcttaacct tcgggagggc gcttaccact ttgtgattca tgactggggg gaagtcgtaa 1500
caaggtaacc gtaggggaac ctgcgggttg atcacctcct ta 1542

```

```

<210> 30
<211> 340
<212> DNA
<213> Bordetella avium

```

```

<400> 30
agagtttgat cctggctcag attgaacgct ggcgggatgc tttacacatg caagtcgaac 60
ggcagcacgg acttcggtct ggtggcgagt ggcgaacggg tgagtaaatgt atcggaacgt 120
gcctagtagc gggggataac tacgcgaaag cgtagctaata accgcatacg ccctacgggg 180
gaaagcgggg gaccttcggg cctcgacta tttagcgggc cgatatcgga ttagctagtt 240
ggtaggggta cggctcacca aggcgacgat ccgtagctgg tttgagagga cgaccagcca 300
cactgggact gagacacggc ccagactcct acgggaggca 340

```

```

<210> 31
<211> 339
<212> DNA
<213> Bordetella trematum

```

```

<400> 31
agagtttgat cctggctcag attgaacgct ggcgggatgc tttacacatg caagtcggac 60
ggcagcacgg acttcggtct ggtggcgagt ggcgaacggg tgagtaaatgt atcggaacgt 120
gccagtagc gggggataac tacgcgaaag cgtggctaata accgcatacg ccctacgggg 180
aaagcggggg accttcgggc ctgcactat tggagcgggc gatatcggat tagctagttg 240
gtggggtaac ggctcaccaa ggcgacgat cgtagctggg ttgagaggac gaccagccac 300
actgggactg agacacggcc cagactccta cgggaggca 339

```

```

<210> 32
<211> 1496
<212> DNA
<213> Bordetella petrii

```

```

<220>
<221> misc_feature
<222> 821
<223> n = A,T,C or G

```

```

<300>

```

&lt;308&gt; GenBank Accession No. AJ249861

&lt;309&gt; 2003-01-03

&lt;400&gt; 32

```

cgctagcggg atgctttaca catgcaagtc gaacggcagc gcggacttcg gtctggcggc 60
gagtgggcgaa cgggtgagta atgtatcgga acgtgcccag tagcggggga taactacgcg 120
aaagcttagc taataccgca tacgccctac gggggaaagc gggggacctt cgggcctcgc 180
actattggag cggccgatat cggattagct agttggtggg gtaaaggcct accaaggcga 240
cgatccgtag ctggtttgag aggacgacca gccacactgg gactgagaca cggcccagac 300
tcctacggga ggcagcagtg gggaattttg gacaatgggg gcaaccctga tccagccatc 360
ccgcgtgtgc gatgaaggcc ttcgggttgt aaagcacttt tggcaggaaa gaaacggctc 420
tggctaatac ctggggcaac tgacgggtacc tgcagaataa gcaccggcta actacgtgcc 480
agcagccgcg gtaatacgtg ggggtgcaagc gttaatcgga attactgggc gtaaagcgtg 540
cgcaggcggg tcggaaagaa agatgtgaaa tcccagggct taaccttggg actgcatttt 600
taactaccgg gctagagtgt gtcagaggga ggtggaattc cgcgtgtagc agtgaaatgc 660
gtagatatgc ggaggaacac cgatggcgaa ggcagcctcc tgggataaca ctgacgctca 720
tgcacgaaag cgtggggagc aaacaggatt agataccctg gtagtccacg ccctaaacga 780
tgtcatctag ctgttggggg cttcggctct tggtagcgca nctaacgcgt gaagttgacc 840
gcctggggag tacggtcgca agattaaaac tcaaaggaat tgacggggac ccgcacaagc 900
ggtggatgat gtggattaat tccatgcaac gcgaaaaaac ttacctacc tggacatgtc 960
tggaatgccg aagagatttg gcagtgtctc caagagaacc ggaacacagg tgctgcatgg 1020
ctgtcgtcag ctcgtgtcgt gagatgttgg gttaagtccc gcaacgagcg caacccttgt 1080
cattagttgc tacgaaaggg cactctaatt agactgccgg tgacaaaccg gaggaagggtg 1140
gggatgacgt caagtccca tggcccttat gggtagggct tcacacgtca tacaatggtc 1200
gggacagagg gctgccaacc cgcaaggggg agccaatccc agaaacccga tcgtagtccg 1260
gatcgcagtc tgcaactcga ctgctggaag tcggaatcgc tagtaatcgc ggatcagcat 1320
gtcgcggtga atacgttccc gggctcttga cacaccgccc gtcacaccat gggagtggtg 1380
tttaccagaa gtagttagcc taaccgcaag gggggcgatt accacggtag gattcatgac 1440
tgggggtgaag tcgtaacaag gtagccgtat cgggaagggtg ggttggatca cctcct 1496

```

&lt;210&gt; 33

&lt;211&gt; 363

&lt;212&gt; DNA

&lt;213&gt; Bordetella strain SHA-1

&lt;400&gt; 33

```

agagtttgat cctggctcag gacgaacgct ggcggcgtgc ctaacacatg caagtcgaac 60
gcgagtgtct tttttcgcaa gagagcagac acttgagtgg cgaacgggtg agtaacacgt 120
gagcgactca ccttccggtg ggggataact gtccgaaagg gcggttaata cctcgtatgc 180
tcctgaccg ccgggtcagt gaggaagtg ggcttcgtaa gaagctcatg ccagaagaga 240
ggctcgcgcc ccatcagcta gttggcgagg taacggctca ccaaggcaat gacgggtagc 300
tggctctgaga ggatggctcag ccactctggg actgagacac ggcccagact cctacgggag 360
gca

```

&lt;210&gt; 34

&lt;211&gt; 363

&lt;212&gt; DNA

&lt;213&gt; Bordetella strain SHA-110

&lt;400&gt; 34

```

agagtttgat cctggctcag gacgaacgct ggcggcgtgc ctaacacatg caagtcgaac 60
gcgagtgtct tttttcgtaa gaaaggtgac acttgagtgg cgaacgggtg agtaacacgt 120
gagtaactca ccttccggtg ggggataact gtccgaaagg gtggctaata ccccatatgc 180
tcctgaccg ccgggtcagt gagaaaagtg ggcttcgtaa gaagctcaca ccagaagaga 240
ggctcgcgcc ccatcagctg gttggcgagg taatggctca ccaaggcaat gacgggtagc 300
tggctctgaga ggatggctcag ccacactggg actgagacac ggcccagact cctacgggag 360
gca

```

&lt;210&gt; 35

&lt;211&gt; 343

&lt;212&gt; DNA

&lt;213&gt; Bordetella strain B1-10

&lt;400&gt; 35

```

agagtttgat catggctcag gatgaacgct ggcggcgtgc ttaatacatg caagtcgaac 60

```

```

ggagggaggt agtaatactt tccttagtgg cgaacgggtg agaaacgcgt tggtagacctg 120
ccccgaagag cgggacaaca gaccgaaagg tttgctaata ccgcatgagc tcttgctggc 180
tagagtggca agaggaaagg ccgaaaggcg ctttgggagg ggcctgcgtc ccatcagcta 240
gttggcgggg taacagccca ccaaggcgat gacgggtagg ggacctgaga gggtagacccc 300
ccacaatgga actgaaacac ggtccataca cctacgggtg gca 343

```

```

<210> 36
<211> 342
<212> DNA
<213> Bordetella strain B1-12

```

```

<400> 36
agagtttgat catggctcag gatgaacgct ggcgggcgtg ctaatacatg caagtcgaac 60
gggagatgta gcgatatgtc tccagtggcg aacgggtgag taacgcgttg gtgacctgcc 120
ccgaagagcg ggataacaga ccgaaaggac tgctaatacc gcatgagctc tcggcagtta 180
gaggggcccga gaggaaaggc cgaaggcgcg tttgggaggg ggcctgcgtc catcagctag 240
ttggcgaggt aagagctcac caaggcgatg acgggtaggg gacctgagag ggtgaccccc 300
cacaatggaa ctgaaacacg gtccatacac ctacgggtgg ca 342

```

```

<210> 37
<211> 342
<212> DNA
<213> Bordetella strain B6-52

```

```

<400> 37
agagtttgat catggctcag attgaacgct ggcgggcatgc tttacacatg caagtcgaac 60
ggcagcacgg gcttcggcct ggtggcgagt ggcgaaacggg tgagtaatgc atcggaacgt 120
gcccatttgt gggggataac gcggcgaaag tcgcgctaata accgcatacg ccctgagggg 180
gaaagcgggg gattcttcgg agcctcgcgc aattggagcg gccgatgtca gattagctag 240
ttggtagggt aaaggcctac caaggcgacg atctgtagcg ggtctgagag gatgatccgc 300
cacactggga ctgagacacg gcccagactc ctacgggagg ca 342

```

```

<210> 38
<211> 342
<212> DNA
<213> Bordetella strain B6-60

```

```

<400> 38
agagtttgat catggctcag attgaacgct ggcgggcatgc tttgcacatg caagtcgaac 60
ggcagcacgg gcttcggcct ggtggcgagt ggcgaaacggg tgagtaatgc atcggaacgt 120
gcccatttgt gggggataac gcggcgaaag tcgcgctaata accgcatacg ccctgagggg 180
gaaagcgggg gattcttcgg aacctcgcgc aattggagcg gccgatgtca gattagctag 240
ttggtagggt aaaggcctac caaggcgacg atctgtagcg ggtctgagag gatgatccgc 300
cacactggga ctgagacacg gcccagactc ctacgggagg ca 342

```

```

<210> 39
<211> 20
<212> DNA
<213> Artificial Sequence

```

```

<220>
<223> Primer TPU1

```

```

<400> 39
agagtttgat cmtggctcag 20

```

```

<210> 40
<211> 20
<212> DNA
<213> Artificial Sequence

```

```

<220>
<223> Primer RTU8

```

```

<400> 40

```

aaggaggtga tccakccrca

20

<210> 41  
 <211> 38  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> Primer Myko109-T7

<400> 41  
 gtaatacgac tcactatagg gacgggtgag taacacgt

38

<210> 42  
 <211> 40  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> Primer R259-SP6

<400> 42  
 atttaggtga cactatagaa tttcacgaac aacgcgacaa

40

<210> 43  
 <211> 418  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> IGF2/H19 Amplicon

<400> 43  
 accatgcctg ctgctccctg cctgccagcg ccctgcacat actttgcaca tggctggggg 60  
 ccagctgcgg gtccctgggg actcggatgg cacagagggc cccttcctgc caccatcacg 120  
 gctcagacct cacgttcctg gagagtaggg gtgggggtgct gaggggcaga gggaaagtgc 180  
 gcaaaccccc tgggtggggcg ggtgccagcc ccccaggccg attcccatcc agttgaccga 240  
 gcttggtgctg gtcaccgcgg tttccgcagg acagagtccc cacagccgct gggcaccccg 300  
 gtcccattcg cggccacttt cctgtctgaa gaccgcatgt tgccgggctg tgcttacggc 360  
 tcgcggggcg actctactga caagcggtag gcggcctcac agactctccc aggcccg 418

<210> 44  
 <211> 269  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> K-Ras Amplicon

<400> 44  
 cgtccacaaa atgattctga attagctgta tcgtcaaggc actcttgctt acgccaccag 60  
 ctccaactac cacaagttta tattcagtca ttttcagcag gccttataat aaaaataatg 120  
 aaaatgtgac tatattagaa catgtcacac ataagggtta tacactatca aatactccac 180  
 cagtaccttt taatacaaac tcacctttat atgaaaaatt atttcaaaat accttacaaa 240  
 attcaatcat gaaaattcca gttgactgc 269

<210> 45  
 <211> 428  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> Amplicon 1

<220>

<221> misc\_feature

<222> 123

<223> n = T or C

<400> 45

```

gggaacatct tgctgctctc agagccagaa aatgctgaca gcctcatgct ggtggacttc 60
gagtacagca gttataacta taggtgagggc tggaaagatg gcttcccata gatctgttcc 120
canagggctc ttgaaaacag gccagctgcc cagggcattt ggggactgaa tgtccacctt 180
attctcccag gggctttgac attgggaacc atttttgtga gtgggtttat gattatactc 240
acgaggaatg gcctttctac aaagcaaggc ccacagacta cccactcaa gaacagcagg 300
tatgtgggcc agaggctggg gagcaggacc catcctgtga ggaaggaggg aggtggagtc 360
tggaaggaat ggccggaaag gatgttacct gggaaatact ccacagtctc cccaattcct 420
gactcttg                                     428

```

<210> 46

<211> 429

<212> DNA

<213> Artificial Sequence

<220>

<223> Amplicon 2

<220>

<221> misc\_feature

<222> 174, 179

<223> n = T or G

<220>

<221> misc\_feature

<222> 317

<223> n = C or T

<400> 46

```

cccactactc tgccttcctg ttcagtaact cttacttttg cctgaagtaa cagcatcttc 60
tactttctcca tctagagatt tttgtgtgtg tgccatcaag gttagcaaac tttatacgta 120
gcctaacact taaaaaatgc actcattatc ttaaacctaa taaattccag agtntattnt 180
ggttctcctc tgttgccctt cctaaaaaat gagctgaaga tgacagtatt tttctttaca 240
tgcttgggta tgacttttaa agttttatth aaataaatgt tgaagctcaa gtttaaagaa 300
gcgttgcgaga ggcccanggt ctctgggtgc cgggccacct gtccatattc cacatttgct 360
gactgtgctc cctgcactcc actcaagttg agagttcaaa tagtcttgaa ggggaatcag 420
cttcaggat                                     429

```

<210> 47

<211> 465

<212> DNA

<213> Artificial Sequence

<220>

<223> Amplicon 3

<220>

<221> misc\_feature

<222> 285, 286

<223> n = G or A

<400> 47

```

ggaagtgggt ttggaggtga taactcacta tttttaggct agaacacaaa gaacaattag 60
tgaatttaag taagaaagtg gaagttatca actaatgtgc tattaataaat attattttta 120
gtaagaggca tcctaggagt tacagaatgt ctacattcta cagaaatgtc ttcctctcaa 180
gtcttcagag agcaaaggct acagctacct aaagtgtttc cacttcaagc acagattgta 240
tgctgaaga ctacatacct tgcattatca accagttcag caagnncacc aaacaagaat 300
tcgtgagtggt ttctgaaatg ataaatacta aaagtcagca aaagaattat tgaagttata 360
attcctaata aaaagccatg gttataaaat atttaagttt tttgaaaaaa atcttaaaac 420
caccatttgc attgttttta tactactcaa ggctttccag agctc                                     465

```

<210> 48  
 <211> 426  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> Amplicon 4

<220>  
 <221> misc\_feature  
 <222> 131  
 <223> n = A or G

```
<400> 48
tatgataggg aagatgcggc catcactggg atattttcaa atcccaagga catcagagtg 60
aagtgtcagt tgtcagatga ttttaaaagt tatgtcttca gagaaaaaaa gattcatttt 120
ctcatttttaa nccaattaaa tattctgagt gagactaatc actcatttgc ctacgacctt 180
ttagaaaagt tgttttggtg aaatactgta cgtacgctta atctaaattt gcattgacta 240
tgtttttagtg tattttataaa tgggtgaactc agtttctgaa attaaacttc ttatttgcaa 300
ttttctagtg ctggcagaca ctggcttttt attttttagga taagaaaaca ggcatattct 360
ttgtggtcca ttatctagag cccatacttg ggcagcattt gaaatttcac cttaacccca 420
gacagg                                           426
```

<210> 49  
 <211> 533  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> Amplicon 5

<220>  
 <221> misc\_feature  
 <222> 47, 50, 51, 52  
 <223> n = A or G

<220>  
 <221> misc\_feature  
 <222> 111, 135, 185, 359  
 <223> n = T or C

<220>  
 <221> misc\_feature  
 <222> 198  
 <223> n = T or G

<220>  
 <221> misc\_feature  
 <222> 253  
 <223> n = C or A

```
<400> 49
tgcacagggt ttgatctctg agatgtttta tactctctgg cttgganaan nnacagtcct 60
gtagtatcaa gaccagacct tgtgtcccca gcccaaggct gccctgggcc nagggacagt 120
atttgagagc ttcgntggca gttttgcgtt ggaatcacct ggtgcctccc tgtacgtcca 180
cccancctgt gccaganc ccttcgcaag caccatatgc tgtagatcc tcgagcagcc 240
ttgtgggaca gcnaccctgg ggctgggtatc accatttatg taagaaaaaa aagggaagtgc 300
tggcccaggg tcccacagcc agcaagttgg agctgcactg cccaagcagg tcctttagnc 360
agctctctgt tgtcccccaa gccctcagc cccccaggca gctctaaggg ctgagctgct 420
gcaggattcc ttagagaagc tgaagggttt gggtcctcag ctctggccg gggcaagtct 480
ggccaagcag catggcagcg atgaagtcca catgatcgaa ggggtggatgc tta      533
```

<210> 50  
 <211> 422  
 <212> DNA

<213> Artificial Sequence

<220>

<223> Amplicon 6

<220>

<221> misc\_feature

<222> 131

<223> n = C or G

<400> 50

```
caaggcttga ctgaaggacc tcattccagag tcactatcag agctcgcctcc agcactctcc 60
ttcatggagc cccaggggtca gcagtggaga gggtcagagc acccccacaa ccccccacagc 120
gagatgacct nggctcgtct tgccctctgcc accagagctg tgactgtggg caagatattt 180
tacagcagga ccagtttctt gtccgaaggc agggctatta acaggacctt actcaggata 240
cttgtgtgga taaaatcatg tgtgaagagc ttttagggcc ttgcttctca aagagggggc 300
ccaggccatc agcacacctg gagtgtgcag ggggaagctc tcagccccac cccagccctc 360
tttacaagac ccccgcgtag cacctgtggc gtggcacctg tgtgcactcg tgttttcaaa 420
gc 422
```

<210> 51

<211> 411

<212> DNA

<213> Artificial Sequence

<220>

<223> Amplicon 7

<220>

<221> misc\_feature

<222> 228, 230, 235, 236, 240, 243, 245

<223> n = A or T

<400> 51

```
atccctctgt ctctccacca ggaactagaa ttttgtgtat cactgcgctt atttttttct 60
tttagtttac cacatgtgta tgtatctata agtaatataa cgatctgttt tgcttctcta 120
tattgtgcca tatgtcgttt ttagcaactt gcttttagct gacgttctgt tttcaagatt 180
catccatgtt gctgcataaa cctaaccattc acttactgtt gctgggtgnan aacannccan 240
cangngagca cagacatttg ggttgtttcc aagacatgta tcaatggcaa aaattaagat 300
gtctgacaaa accaagagtt ggagaggatg tggatggctt ggaattttat ctgctccttt 360
acaccctctc tggaaaaact gtacaaacaa ttctgcaagg atttttccag a 411
```

<210> 52

<211> 445

<212> DNA

<213> Artificial Sequence

<220>

<223> Amplicon 8

<220>

<221> misc\_feature

<222> 84

<223> n = C or G

<220>

<221> misc\_feature

<222> 265, 269

<223> n = T or C

<400> 52

```
tagtgaaaag ggcacacagc tgtaactcca gacatctccc tattgcatgg atctgcactt 60
gactggcagc ctagacagaa ggantgctat ttgtcttttc tggctgacag ctgagcagga 120
ccagcgtctg ctgcaaccaa ggagcattgc ttcgcttgct atacttctgc ttccaaacag 180
ccctcttttg tttgtgctgt gaagttccca taccgtctgc catctcagca tctcctctgg 240
```

```

ctgaacctcc ttcacagttt gtacnctang ttaaattagc tgttcaattc ctccaggaga 300
aaggactgtg gctattagtt cttagaagcc ccaaagagcc cagtatgggc ctaggccttg 360
actaggatcc catgaagcta gctggctggc tgggtgggtg gatcagaccg gcaaaagcac 420
tgtaggagct tgaaacccag cagac                                     445

```

```

<210> 53
<211> 425
<212> DNA
<213> Artificial Sequence

```

```

<220>
<223> Amplicon 9

```

```

<220>
<221> misc_feature
<222> 136
<223> n = A or C

```

```

<220>
<221> misc_feature
<222> 385
<223> n = G or A

```

```

<400> 53
cctctccttc tctgcgtgac cttgggctgg gagccacca ggaaatgttc tcgagaaatg 60
aggacttcaa ttccgaggtg gggagtgtca tctcctctct catgcctcag tttcccaatt 120
tatagacaag gtggngggag ccttcttgag gcccccttgg gctctgacat ttcattgaacc 180
ggtaacaccc ctccactca gcatgcacct ggatgcccaa ggcgggtgtc tgggagaaaag 240
gtctgtctcc acagtgaaga ggccagggtg gcctccagcc tagggctggg gggcaggggtc 300
ctcagtgcag agggctgagt gggctcttgt tcagacgggt ggtcagggag aggatgggtc 360
agagacagtg agcacagagg gagngttca ggtgccttga gtggcacctc atggaaagaa 420
gccct                                             425

```

```

<210> 54
<211> 424
<212> DNA
<213> Artificial Sequence

```

```

<220>
<223> Amplicon 10

```

```

<220>
<221> misc_feature
<222> 76
<223> n = C or G

```

```

<400> 54
aacctcctac gggcctttta tgagctgtcg cagactcacc ggggtaatgg catcccccaa 60
agctgtgggtg tgaccttggg caatccctgg ggcctctcac tcccatgctg aggtgggtca 120
gaccacagc gcctgacctc aggtccctc tgggctgggc ctgggtccag gtgctgggat 180
ttgcgatggg cctgcgggga acatctagat cagctgggtc ctttaagggcc gcaacgatga 240
acaggcccca cctgtctcc tcacactgcc actggcagta cacaaggccc ttgcttattt 300
atattttctga caacctgtaa ctctgggcag gccgactgca gctgaccca gctactgcag 360
aaaatgaagc ccagacaaaag gagagggcc cactgctccc aagtgggtgga gctgttgttc 420
caat                                             424

```

```

<210> 55
<211> 393
<212> DNA
<213> Artificial Sequence

```

```

<220>
<223> Amplicon 2.1

```

```

<220>

```

<221> misc\_feature

<222> 157

<223> n = T or A

<400> 55

```

agatgccct gacactgact caaggctcag agaaggcggg cacctgccta aggccacccg 60
gtaggcccaa ggtgtatcaa gactccatcc caggacctct gggccctggg ctgcaggcct 120
gggccctacc cactgattga ttggacctgt gcctccncca ggtgatggtc aagtggactt 180
tgaggagttt gtgaccttcc tgggacccaa actctccacc tcagggatcc cagagaagtt 240
ccatggcacc gactttgata ctgtcttctg gaaggtatcc cctggctagt tgggacccag 300
ggctgtgcac actgtggagt tctgttctgg agccagtga tggctggggc cacactgtaa 360
aggggggatg accacctcag gcttgtgtcc act                                     393

```

<210> 56

<211> 499

<212> DNA

<213> Artificial Sequence

<220>

<223> Amplicon 2.2

<220>

<221> misc\_feature

<222> 103

<223> n = T or G

<400> 56

```

gaacccatgt cctccacatc cacaagtctc caaagggttg gggattcctt gtgtgagctc 60
cagatcccaa tctcttggtg gtccatgggt ttgtcaatga cangtctctc cttgtcacc 120
cagtatgaaa atgaggagac ttacagggtg cgaacattcc agataggtag aggggagaaa 180
ctggtgaagg ccctgggtcc agccttctg ggtagaacca tctcctccta tgccacctgt 240
ttgggcccc cctgggactt tatcacctgt ccagacttca tggaggaact gtttaccagg 300
tgaatgtcca tccccccaa ctcacagtgg tgactgtctc cgactagctg tgtcttgagg 360
atgtcaccca agccctctga gcctgtttgc tcctttgtaa agcagtgaga tgaacctcat 420
agggttctta tgggaactaa atggcctaag gcatggcaag cagggtccaa gtgcctggct 480
ctgtgaaaag gctgctgag                                     499

```

<210> 57

<211> 399

<212> DNA

<213> Artificial Sequence

<220>

<223> Amplicon 2.3

<220>

<221> misc\_feature

<222> 31

<223> n = C or G

<400> 57

```

ccaggacagc tgaggacatt ccagaccctc ncatctcctt cctggagcct cacaggcccc 60
cagagcccct gaaagggcag aaattgggtc gctcagcagc cactcacact ggatcttata 120
gaggttgctg gtttccttct tggacagcag ggtggagtgg gcatccttcc ggggatccac 180
tttgtgaaca aagaggggagc ggaaccagct gccttcattg tccttggaaat agaaactgca 240
ggacagagga gttgaggggg acgcgcggag gttgggggag ccccagcaat tccatccact 300
tggatgtcct gctcccctag accagtgacc cacatttctg ggaacagggc cacggagtcc 360
tgtggcagct ccagactgtg aaatgctatt ggagccagc                                     399

```

<210> 58

<211> 365

<212> DNA

<213> Artificial Sequence

<220>

<223> Amplicon 2.4

<220>

<221> misc\_feature

<222> 211

<223> n = T or C

<400> 58

```

ggggttagcag agtagtcccc agaacagggc tgggctgcat cccacatcca gagaggtgtg 60
ctgagtggac actaacatac cttattgttt ttgagcttgt tcatgcagtc catgagggct 120
gggtagccac ctgagaatcg ccacaggtgc actgttgggg gtgagaggta taggtcagtg 180
agctgctggg acccccagca gatgacctcc ncaaggttgg ctaagtgggtg gggacggggg 240
aggcgggggtg gcctgggttcc ctgtagcagc aagactccct gagttccctc tgccttgggtg 300
gaagaccatg ctggggagggg gatgacccta gacacaagtc taggagacct ggatttgagc 360
tccag                                     365

```

<210> 59

<211> 390

<212> DNA

<213> Artificial Sequence

<220>

<223> Amplicon 2.5

<220>

<221> misc\_feature

<222> 77

<223> n = A or G

<400> 59

```

aatgaaccaa gcagagcaca gagcacagga gcacgacgag gatggtgcaa ggcacccgcc 60
aaatcctctg ggctccntga ctaaagctga gggaggaagt agccatcagg gtcccttttg 120
tgccgtcttg tctcggcact ccttggagct gatcactctc ttgctccctg cctaggcccc 180
tctccagaag gcccgatgcc cctgggtggg ggcgaggacg aggatgcaga ggaggcagta 240
gagcttcttg aggcctcggc cccaaggcc gctctggagc ccaaggagtc caggagcccc 300
cagcaggttg gacccacatg gaggcctgca gaacctgagc tgtgaactgg caaccctggc 360
tctggggccg agtcaccttg cacaaggagg                                     390

```

<210> 60

<211> 396

<212> DNA

<213> Artificial Sequence

<220>

<223> Amplicon 2.6

<220>

<221> misc\_feature

<222> 131

<223> n = A or G

<220>

<221> misc\_feature

<222> 239

<223> n = G or C

<220>

<221> misc\_feature

<222> 254

<223> n = C or A

<220>

<221> misc\_feature

<222> 283

<223> n = A or C

```

<400> 60
cccatgacac tggcttacct tgtgccaggc agatggcagc cacacagtgt ccaccgggatg 60
gttgattttg aagcagagtt agcttgtcac ctgcctccct ttcccgggac aacagaagct 120
gacctctttg ntctcttgcg cagatgatga gtctccgggg ctctatgggt ttctgaatgt 180
catcgtccac tcagccactg gatttaagca gagttcaagt aagtactggg ttgggggagna 240
gggttgacgc ggcngagcca ggtctccac ccaggaagga ctnatcgggc aggggtgtggg 300
gaaacagggg ggttgttcag atgaccacgg gacacctttg accctggccg ctgtggagt 360
tttgtgctgg ttgatgcctt ctgggtgtgg aattgt 396

```

```

<210> 61
<211> 368
<212> DNA
<213> Artificial Sequence

```

```

<220>
<223> Amplicon 2.7

```

```

<220>
<221> misc_feature
<222> 100
<223> n = A or G

```

```

<400> 61
cagagagcaa aggtcacagc tacctaaagt gtttccactt caagcacaga ttgtatgcct 60
gaagactaca taccttgcac tatcaaccag ttcagcaagn gcaccaaaca agaattcgtg 120
agtggttctg aaatgataaa tactaaaagt cagcaaaaga attattgaag ttataattcc 180
taataaaaaa ccatgggttat aaaatattta agttttttga aaaaaatctt aaaccacca 240
tttgcatgtg ttttatacta ctcaaggctt tccagagctc cccaactccc ctcaattgtt 300
aatctttaac aagtcctgcc atctattcag aaatgattat tcttcctatt ttgagttggg 360
aaaccac 368

```

```

<210> 62
<211> 451
<212> DNA
<213> Artificial Sequence

```

```

<220>
<223> Amplicon 2.8

```

```

<220>
<221> misc_feature
<222> 228
<223> n = A or G

```

```

<220>
<221> misc_feature
<222> 341
<223> n = G or T

```

```

<400> 62
gatgtacacc actccctgcc tcccgtttta gaaatgaaga aaccatggct cagaggggtg 60
tggaggctca cacagcatca cagggcccca agtggaggag ctgggatatg gacacaggcc 120
cacctgcctt cagaccagac ccctgtgccc ccagccgccc caccaccac agaccacaga 180
gggaggacgt caggcgtcca ggctggcacc tttagcttgg gcaggccncc gcggatggca 240
tctgcaatgg caactgcacc cttggagcgc accaggcagt ccccaaaatt aatcacctcc 300
acctgccgca aggtcttcaa ggtctgtgag ggggaagcaa nggtccagag tgagggtgca 360
gaccacaccc cagccctcag caagccccgg gggccccaca cggtcacatc ccaagccagc 420
caccacacac tgtcctcctc tgcaagtcac c 451

```

```

<210> 63
<211> 790
<212> DNA
<213> Artificial Sequence

```

```

<220>

```

<223> Amplicon 2.9

<220>

<221> misc\_feature

<222> 300

<223> n = C or G

<220>

<221> misc\_feature

<222> 696, 741

<223> n = C or T

<220>

<221> misc\_feature

<222> 771

<223> n = A or T

<400> 63

ttagggaaga	agggccaaag	cactccttgt	agcactcacc	cctacccttc	caagccaccc	60
cagccggtgt	aggtaacctgt	cttcagcagc	atcgctctgg	actcagcttc	cgaggacctg	120
accagatctg	gtctgcgtgt	atcagctgta	tgtgttgggc	tctggaagct	aagaaacgtc	180
tgaaaagcac	tgggggtcacg	gctgcctggc	tagctcggcc	gccctcaacc	ttaggcgtgg	240
atcgtaacct	cgggtcccca	gttgccccgc	ccatccccag	ccatcacttc	ccggagcttn	300
agttcttcct	tcagaaatac	gaaacaacgt	gtcttggtatg	tcagacctca	cacctctgc	360
agtgtctggga	gtccccgagg	cctacggggc	gccttcggcc	ccgcccgggc	tcagaaaaag	420
gcagccactg	gcttaagggtc	accaagaaag	agcggagggg	cggggctgcg	gccagggtcc	480
ggacttccag	ccgggtcccg	gttcccggcc	tgggtcctcc	aaaaccgcag	agccccctcc	540
caccgcactt	atcctaccga	agcgttcaga	cctgccgcgc	cttctgactc	gaatccggta	600
acctgataag	tccgaagcgt	tccagtggag	gcggggcctc	acgaaggcaa	cccttcgcgc	660
aacctatcag	aatccccctt	agcaacgctg	tgcccnegcc	atatgggtcc	ggcctcccag	720
cctccctaag	cccttcccca	ntgggctccc	gccctgcgtg	ctagcgaggc	nggcattggc	780
agaacggact						790

<210> 64

<211> 496

<212> DNA

<213> Artificial Sequence

<220>

<223> Amplicon 2.10

<220>

<221> misc\_feature

<222> 378

<223> n = T or G

<400> 64

cttgtgacct	tccaaggaaa	ggaaccagca	ctcatcaagg	tccactggg	caccaggtgc	60
tgggcttggt	gtgctgtgtg	ttatcccatt	tcagcttccc	agcaaccctc	caagttagct	120
tcagccccca	ccccgcccc	attttacaga	aggaaaacac	aaggctcagg	aagtcagggtg	180
ccaccaagg	aaggctctac	ggctcaggga	ggagcccagg	tccaggctct	gggacctggg	240
tgggtggggg	gtgcagagcc	tgagctggga	cccagtgtg	aggttcagcg	gggcccagc	300
tgcagcacca	ctgccccagg	ctgaccgtac	tggggggccc	gctaacctct	gcctcctttc	360
cttctacctt	cccagggnaa	tgatgcggaa	gagcctaagg	gggtcaccag	cgaaggtagt	420
agtccccgcc	cctgccccgc	ctctcctttc	cccagggtct	tggcctcagg	gcctaccctc	480
accctctccc	cttccct					496

<210> 65

<211> 395

<212> DNA

<213> Artificial Sequence

<220>

<223> Amplicon 2.11

```

<220>
<221> misc_feature
<222> 137
<223> n = A or G

<400> 65
tagaaaggcc attcctcgtg agtataatca taaaccact caaaaaatg gttcccaatg 60
tcaaagcccc tgggagaata aggtggacat tcagtcccca aatgccttgg gcagctggcc 120
tgttttcaag agccctntgg gaacagatct atgggaagcc atctttccag cctcacctat 180
agttataact gctgtactcg aagtccacca gcatgaggct gtcagcattt tctggctctg 240
agagcagcaa gatgttccct gggggaatgg ggtgagggtc tgctcactcc agagccctct 300
ggctcttcca tcttgggtta ggagactcag atgccttctc ctaccttctc ggatgtcatt 360
gtggcagaag acgactggcg atggggtaga ctcta 395

<210> 66
<211> 353
<212> DNA
<213> Artificial Sequence

<220>
<223> Amplicon 2.12

<220>
<221> misc_feature
<222> 249
<223> n = A or G

<400> 66
cattccttcc agactccacc tccctccttc ctcacaggat gggtcctgct cccagcctc 60
tggcccatat acctgctgtt cttgagtggg gtagtctgtg ggccttgctt tgtagaaagg 120
ccattcctcg tgagtataat cataaaccca ctcacaaaaa tggttcccaa tgtcaaagcc 180
cctgggagaa taagggtggac attcagtcct caaatgccct gggcagctgg cctgttttca 240
agagccctnt gggaacagat ctatgggaag ccattcttcc agcctcacct atagttataa 300
ctgctgtact cgaagtccac cagcatgagg ctgtcagcat tttctggctc tga 353

<210> 67
<211> 598
<212> DNA
<213> Artificial Sequence

<220>
<223> Amplicon 2.13

<220>
<221> misc_feature
<222> 80, 206, 295, 373, 400, 479
<223> n = A or G

<220>
<221> misc_feature
<222> 315, 317, 318
<223> n = A or T

<400> 67
ccatctgagc tatttcccca cctctctcta cgggtttaagg gcccagcagg agggagggag 60
caatcagact caagcctggn tgcaaattccc ggctctacca ctgctttcct gtctgatctg 120
aacgagttac ctaacctctc cgagcttatc tacaaaagct gaatgatcct tccctcatag 180
agctattgag agaataagga gatggnngga ggtcacacca tccccaaactt accaagggat 240
cttcctctga cagagactga gcaagatcca gctgggtctga gctgtgtgga tctcncctcc 300
agctgtgcac ctatntnnta accagacacg tcctccagcc cccaagatat acccaggaat 360
tcgaaaggta aantgaaagt cacaacttcc cagcagctcn caatcaagca cagcaaacac 420
gctgctcccc agcacctcct gcagtccagc cccaccctcc ttgctgctgc gcttagagna 480
gcagcctgag accagacctc caggtctctt tcatccaacc cacctgcctg gcacctcagg 540
ggttgggggt ctgctatagt cttcaggaag aaagacctgc cactgacata ctgtggga 598

```

<210> 68  
 <211> 382  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> Amplicon 2.14

<220>  
 <221> misc\_feature  
 <222> 48  
 <223> n = T or C

<220>  
 <221> misc\_feature  
 <222> 154  
 <223> n = A or G

```
<400> 68
tgagaggac atcctcaagc ccagcagagg gggctgcctg gaggaggngt gcctgccaga 60
gaaaactagc ccggggagat ctgggtggca tcaccggggg gcccgaagga ggtaacccca 120
tgagggttac ctgggcaatt cagccacacg cacnaatctc ttccaggctt catcgctagt 180
cagcaggatt ttcagatgca ctgggctaac tttcttctgg aagtattcaa tgacttcttc 240
agtgaagcgt ttcttttcta gttggaaca aaaaggataa gattggaaga aagtttgcta 300
ccacataaat ggcattgagt ataagggtgg tcggtgttaa tcctcctgaa ccagctgtca 360
catggggtat ttttgatgga gg                                     382
```

<210> 69  
 <211> 398  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> Amplicon 2.15

<220>  
 <221> misc\_feature  
 <222> 205  
 <223> n = C or G

<220>  
 <221> misc\_feature  
 <222> 277  
 <223> n = T or A

<220>  
 <221> misc\_feature  
 <222> 304  
 <223> n = T or C

```
<400> 69
cccttctcgc agctgattac ggtcacgtcg atcccgtctt tccagtctcc acgagacgga 60
gcccgggaaa agagtgcacc ccattgctctg ccgccccgcg accccacccc tcgggaatcc 120
ccaccgtctt tcccaatcac cttcttcttc tcaaggcctc ccacgctcc acgttgagga 180
gccgactagg gccgcgcgta caggagctc cacttcctcc cgcacgtgcc ctgccaagga 240
ccccaggagc cctccccacc ccacgctgtc tgtttgngcg ggctgcccga tgagatgcct 300
gtanaagtc agggaaagat ggggatttcc tcctcaagat ttaaaactat agtctgaaaa 360
aatcactga gaacactctt tccagatctt tcccgtc                                     398
```

<210> 70  
 <211> 398  
 <212> DNA  
 <213> Artificial Sequence

<220>

<223> Amplicon 2.16

<220>

<221> misc\_feature

<222> 117

<223> n = C or G

<400> 70

```
ccactcttgt tcttgggcat cagctggttg cctggctgtg ttagtgacct agcccacaac 60
agccccctac tctaccctgg ctacatgcag tgcccatctc tggggtcact gcagagnaga 120
cctggctaata gccaccctct cttccggctg cctttcagga agaccatgct caatgacctc 180
ctgcggttcg atgtgaaaga ctgctcctgg tgcaggtggg tggccccgtg ctccagggcc 240
ctgcctttcc tcttagaaca cagtggcaca gtgctgggtc ccagttgcta gcagagtctc 300
tctcatcatg ggaagctaga aagaagcttc caggaggaga taaccacggc ctcaggggatg 360
ccacatccag agccgccctg tcaggctgag gagatcaa 398
```

<210> 71

<211> 380

<212> DNA

<213> Artificial Sequence

<220>

<223> Amplicon 2.17

<220>

<221> misc\_feature

<222> 37

<223> n = A or C

<220>

<221> misc\_feature

<222> 329

<223> n = C or T

<220>

<221> misc\_feature

<222> 350

<223> n = A or G

<400> 71

```
tgaatcctca tctggggaag tttcaagaat aaaagcngtc ccatctcagc agtctcgagt 60
gtggtgaaat gtgagcgggc cctgtgaggg cggggctgag ctgtcctctc cccctgcagg 120
tggcccagag tggcgagatc ccccatctt gctgcaactt ccccgaggct gtgtgccggg 180
acaagatgtt tgtattctct gggcaaagcg gagccaaaat aaccaacaac ctcttccagt 240
ttgaattcaa ggacaagacg tgagtactct ggccagtggg gtggagggag gacggtcagt 300
tccttcgaat ccttctgaat atgaagaang cctcttgacac ctggtggccn tggttaaccat 360
ccttgtgagc tctgcaaaca 380
```

<210> 72

<211> 698

<212> DNA

<213> Artificial Sequence

<220>

<223> Amplicon 2.18

<220>

<221> misc\_feature

<222> 653

<223> n = C or T

<400> 72

```
cagaagcatg gaattgctga caagcacaga gcttggcgtg gggttggagg ttgcatcagt 60
ctcctgcggg tgctgtagcg aagggctgca aactgggtgg tttggagcag cagacaggta 120
ctcacagctt tgaggggcaa gaggccatc taaggtgtca gcaagggcag tgccctcaga 180
```

```

gcctcagggg tgggtccttc ctgcctcttc caatttctgg tgggtgccag agttccttga 240
agtcccttgg ctgcagctg tatcactctg ccttgggtctt tacctgccgc cttccctcgg 300
catctgtgtc ttcacacggc cctcttgtaa ggacaccagt cattgcgtta gggcccaccc 360
taatcccgta tgacctctc taaacttatt acctctgcaa agaccctatt tccaaaaaag 420
gtcacattcc cagtgtctggc agttaggacc tcagtgtatc tttgcgggga cacagttcaa 480
cctgctaccc atccatcatt ttgtattctg agatcttttt ttctgttttt agctatgtga 540
aaggcatcta ctcttttggc ttgatggaaa ccaacttcta cgaccaggca gaaaaactcg 600
ccaaagaggt aagtgggtcc ttcctaaggt gcctgacccc tcagggagta gcngttggct 660
ggaccagggc atatgagggg caccattcgt gtgtgacc 698

```

```

<210> 73
<211> 698
<212> DNA
<213> Artificial Sequence

```

```

<220>
<223> Amplicon 2.19

```

```

<220>
<221> misc_feature
<222> 257
<223> n = A or G

```

```

<400> 73
gggggttgtc ttttgcatag agaccatgac caggtctggg acagaggaaa gtcaaataaa 60
tcacacatta gagttagaag cagaggctca ggctgagccc aggtttatta tccaaaatca 120
aaatgaaatg cagtgtattaa aggacacaag gcctcagtggt gcatcattct cattgtggct 180
ttcaggcggc tgtggaagac aggggtggga tgggtggcttc gggagggtgag gtgctctggg 240
acttgggcaa gtcttangca agccattcct gctttctggg cctggctccc atggggcatt 300
agaaatgaaa atgctttgtg gactgctgag gacgggtgcaa ggggtgaggtt tcccagctca 360
ccggatcatg gccagcacc agggcatcag cttctgcttt atgggtgggg ctgcagggtg 420
gaagtccttg gccttcagaa tgacctcatg ggcctcctgg aagaggctct cccccactgc 480
tgccctccac cgctgccgc atgtggccag cttgggtcgg ccttcgaaga cttggcagcc 540
agcaccacg ggctgtgggg aaaagggtac agactgggga tggatgggtg tgagggcagg 600
gatgggcagc atctgatttg gggaccacag atctccagga ggtgtttgca cacacactta 660
agcacagtgc catagcccgg tgtggcagca taagcagg 698

```

```

<210> 74
<211> 395
<212> DNA
<213> Artificial Sequence

```

```

<220>
<223> Amplicon 2.20

```

```

<220>
<221> misc_feature
<222> 98
<223> n = C or G

```

```

<220>
<221> misc_feature
<222> 114
<223> n = G or A

```

```

<400> 74
ctcctctgtc cctcctcaga ccctcctcc tctcccaca cgcccactgt aaagggtccc 60
tgcgtcagga gctgccaggc cgagggccag ggcaccnga ggacagctgc tccngcagca 120
ctcaccgat gcatgtcttc atacttgaga aaaagcacgt tcgagtccat gcggtgctcc 180
cagaactcct gcacgtgctc aaaccaggag ccgtagccca ctgcggagac aggggacagg 240
gtgagccaca cggtgggca ggagaagcgc acacatgggg ccatcccccac cccacagggc 300
tgccctctcg ccaccagca gccgtgatga ggacatcgtg atccctgcgg acaagtctgg 360
caaaggcccc cgaggcactc acgtcttgag ccac 395

```

```

<210> 75

```

<211> 383  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> Amplicon 2.21

<220>  
 <221> misc\_feature  
 <222> 21  
 <223> n = C or T

<220>  
 <221> misc\_feature  
 <222> 61  
 <223> n = A or G

<220>  
 <221> misc\_feature  
 <222> 83, 84, 85, 86  
 <223> n = C or deletion

<400> 75  
 ctggactgga ggccaaagtc ntgcggggaa cgtgcgggaa gagcagagcg tgcaggcagc 60  
 ngagactaac aagaagccct ggnnnnagag ggcaggaaca ggtggacgaa caaccagatg 120  
 agagaacgta ccaggcatgc aagctagacc caggaatcaa cgggctgagg cttagcgtcc 180  
 cctacggcgt ccaccagcct gaccgcgggc ctgctgggccc cgggggggagg ggccttcctg 240  
 ctgggggtcga gctgcagcgc acgggtgggc attagaggca caatagagca ggtagtttag 300  
 agtcctctggg gggacagggc aggggcaggc cagaggctgg cgatgtaagg gttggcctgc 360  
 caggacagca caggtagcac caa 383

<210> 76  
 <211> 385  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> Amplicon 2.22

<400> 76  
 tgaatagtgc gttgcaggtc catgcacttg tcagtttgtt catttctctgg aggcttctag 60  
 ccctgggtgt ccatggccct tgcagatact tgctgggtcag gaatgagcct tctgaggcaa 120  
 gactgctgga ttgtccaggc agggctattg atgccagccc cttaacttaa ttctgcccag 180  
 acaagaagat gtttgagggtg aagcggcggg agcagctgtt ggcactgaag aacctggcac 240  
 agctgaacga catccaccag cagtacaaga tccttgatgt catgctcaag gggctcttta 300  
 aggtgtgtgc aggcaggggg cagctcatgg caggtccagt ctttgatcta ggcactgatg 360  
 ggtaaacagg agttccctaa cgggt 385

<210> 77  
 <211> 357  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> Amplicon 2.23

<400> 77  
 acaggagttc cctaacgggt tggtgttcag ggacagggga actgcgcaca cgtaagactt 60  
 gaagtggggt ttaaataaat ggggatggga gcagtctgtg atggggcactg cgaagccact 120  
 cagccctggc gggattccct caggtgctgg aggactcccg gacagtgtct accgctgtctg 180  
 atgtgctccc agatggggccc ttccccagg acgagaagct gaaggatggg atgggtctgcc 240  
 ctgccccgcc ctgtcctccg caccaccgga tcttctctag ctgctccttc tctcctgttc 300  
 ttgtcactct ttttttctcc ccggaagtgc cctcttgtgg caccttctaa gtgggtcc 357

<210> 78

<211> 355  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> Amplicon 2.24

<220>  
 <221> misc\_feature  
 <222> 183, 256, 284, 327  
 <223> n = C or T

<400> 78  
 gcagagatca gagcatcgaa taatgggttc taaaatatct tggaaaagga aacagtccta 60  
 tccagatgaa atgtgttcat accgtagaca tgacagagac cagctcttgt tcagtgtccc 120  
 ctacctgtg gctgttccct cggctcctcg aacagatcag ccgagcttat ggaggaactt 180  
 gcngacagcc tctctaggcg ggccctggtc tcatactaga gaagacaagg aaaaggaaat 240  
 gttaggctcc aaagantgtg ggcagttttg caaaaagaat cacngaagag ctgtcatttg 300  
 aaagtgtttg acccccaggc tctttcnttc caacagttac tgaatgccac tgcca 355

<210> 79  
 <211> 399  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> Amplicon 2.25

<220>  
 <221> misc\_feature  
 <222> 279  
 <223> n = A or G

<400> 79  
 ccttagaagc ctggaactct tgtaaataag gtagctatct gtatgaacag gaaactgagt 60  
 cagcttatta ggaaatgata agattctgca gaagaacata ttgtatagtt ttccgtagaa 120  
 agaggagagg cctaattcct ttttgttttg aacttagatc aaattactca ttaaacaaga 180  
 tgatgacctt gaagttccc cctatgaaga catcttcagg gatgaagagg aggatgaaga 240  
 gcattcagga aatgacagt atgggtcaga gccttctgng aagcgcacac gggttagaaga 300  
 ggtgagtttg ggtctctcac agctatccca gaggaacttg cactcccaga ggtcggaggt 360  
 catcctgaag cctgccaggc caagggtgtac tgagggcag 399

<210> 80  
 <211> 379  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> Amplicon 2.26

<220>  
 <221> misc\_feature  
 <222> 44  
 <223> n = C or T

<400> 80  
 ttccacctcc cttgttggtc tccctgcccc ctgcctggct cccntctgcc tcttagagct 60  
 tgtaactgtc tttgttgatc cttcttgcat acttgggcat agacctcggg cctgggtccct 120  
 gcaaggagcg ggtgtgaatg ctccacggcc ccttagctac ctgtgacacc ttgtgtccac 180  
 aggttccgta gtaagatgga agctgctggc ttactatct cgggagccag tcaccccatc 240  
 tgccctgtga tgctgggtga tgcccggctg gcctctcgca tggcggatga catgctgaag 300  
 agaggtaagg gtgctgagac aagggaactg gtgggtgggtc ctgagagaag agaaagggaa 360  
 acccctagac tgtgacca 379

<210> 81

<211> 398  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> Amplicon 2.27

<220>  
 <221> misc\_feature  
 <222> 346  
 <223> n = C or G

<400> 81  
 gccagcatta aataaaagag ccaggaatta aaatttttagt gtcctaatagc ctctacataa 60  
 tttgccgtat tttcctttca tggccttagct ataggaaatt taccctctgg gctctctcat 120  
 gctcttctcg agccttctta actcgttcta ttctttcttt gatctctcgc tcttcacggt 180  
 ttcgctcata ctttctccga tgttctgcaa ttttctgtgc ctagaaaaaa gagccatagc 240  
 aaaataagct tgctccaaaa gctgaataac atcaacacaa atattctttg tagagagatg 300  
 ttttaattcaa catgcagttc agaaaaatga cagatttgtc ttgtanaaaa agacctaaca 360  
 caagctaagc ctttaagaaa accaacctca actgcatg 398

<210> 82  
 <211> 371  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> Amplicon 2.28

<221> misc\_feature  
 <222> 291  
 <223> n = A or G

<400> 82  
 tctgtctcctt gtccctcatcc ccacccatga gcaggacatg aacccccaga gcctgccaga 60  
 gcatgctctg cacagtaagt aagtgtgtgt ccaggcacag aacgcccaga agaaggccca 120  
 gagggcgggc cattccccga gagagcttca gtacctgtcc tgaagctgga cacggtggcc 180  
 ccagttcaag gatttcacgt gattttgaac agcttctgcc atcttccctc tgtgaagata 240  
 cgaaacaaaa tgtaaaatcc acaacacagg tgtagctgc agggcctcac natggactat 300  
 tagattcaaa tggtagattc atagaaatat caaaaaacaa gagtgccttt aaaggtggca 360  
 aaacgtgaca t 371

<210> 83  
 <211> 395  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> Amplicon 2.29

<220>  
 <221> misc\_feature  
 <222> 260  
 <223> n = C or G

<400> 83  
 cggactgagc ttttaccctt gggctgtggt tgggcgggtg ggaaaggcca tgtatcaggg 60  
 cctagcagag gccttggtg gcattgggcaa ttggaggcct tgccctgggc cagtgtggtc 120  
 cccgccatgc gtcccatctc cgcacactc ggtctctccc acagggatga cggaacacac 180  
 caagaacctc ctacgggcct tttatgagct gtcgcagact caccggggta atggcatccc 240  
 ccaaagctgt ggtgtgaccn tgggcaatcc ctggggcctc tcactcccat gctgaggtgg 300  
 gtcagacca cagcgctga cctcaggctc cctctgggct gggcctggtc ccaggtgctg 360  
 ggatttgcca tgggcctgcg gggaacatct agatc 395

<210> 84

<211> 328  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> Amplicon 2.30

<220>  
 <221> misc\_feature  
 <222> 257  
 <223> n = C or T

<400> 84  
 atctcacccc tggattttcc caggccaggc tgtgcaccca aaaactgggg ctgcagggaa 60  
 ggggtggtttc cgcacccctg ctcacctggg gtcacacctca aagagatact ggatcccctg 120  
 gccatgggtgc acatcccagc ccacgacgag gatcctgggt acagacagcg ctgggtggcaa 180  
 aggggcaggc cctcccacct ccaggagccc ggccagggat gggaagggtg tggctgggtt 240  
 ctctcgctc ctgcgengcc ccttgctgtg tggcctgggc ccacccccct gcagccagcc 300  
 tggcacacac ctgtgtagcc cgtgtttc 328

<210> 85  
 <211> 483  
 <212> DNA  
 <213> Mycobacterium chelonae

<400> 85  
 acgggtgagt aacacgtggg tgatctgccc tgcactctgg gataagcctg ggaaactggg 60  
 tctaataccg gataggacca cacacttcac ggtgagtggg gcaaagcttt tgcggtgtgg 120  
 gatgagcccg cggcctatca gcttggtggg ggggtaatgg ccaccaagg cgacgacggg 180  
 tagccggcct gagaggggtga ccggccacac tgggactgag atacggccca gactcctacg 240  
 ggaggcagca gtggggaata ttgcacaatg ggcgcaagcc tgatgcagcg acgccgcgtg 300  
 agggatgacg gccttcgggt tgtaaacctc tttcagtagg gacgaagcga aagtgacggt 360  
 acctacagaa gaaggaccgg ccaactacgt gccagcagcc gcggtataac gtaggggtccg 420  
 agcgttgtcc ggaattactg ggcgtaaaaga gctcgtaggt ggtttgtcgc gttgttcgtg 480  
 aaa 483